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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,324	04/02/2001	Takahiro Hoshida	5000-4867	9409

7590 07/28/2004

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EXAMINER

LOPEZ, FRANK D

ART UNIT	PAPER NUMBER
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3745

DATE MAILED: 07/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/824,324	Applicant(s) HOSHIDA ET AL.	
	Examiner F. Daniel Lopez	Art Unit 3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4 and 6-23 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20 and 21 is/are allowed.
- 6) ☒ Claim(s) 4, 6, 10, 22 and 23 is/are rejected. *6-15, 17-19* *9/19*
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

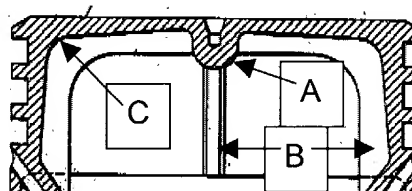
Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

Applicant's arguments filed April 30, 2004, have been fully considered but they are not deemed to be persuasive.

Applicant appears to argue that the ribs of Weidely are not ribs, because they are not discussed. Applicant is mistaken. A document discloses elements by drawings, even if they are not discussed. The drawings of Weidely clearly show 4 ribs (B, below) extending axially along an inner circumferential wall and radially along an inner end face to meet at a central protrusion (A, below). The fact that the specification does not mention them does not make them disappear. Therefore, the art rejection using Weidely is maintained.



Applicant indicates that the limitation "the thinnest portion of the end wall is closer to the outermost peripheral portion than to the axial center of the inner end face with respect to the radial direction" is supported by the specification, on page 10 line 1-29, and refers to "the radius of an outer arcuate line 373 ...is smaller than that of an inner arcuate line 374. This is incorrect. The radii refer to radii of circles, a part of which form the arcuate lines 373 and 374, and do not refer to the radial distance from the center or the outer peripheral surface. Therefore, they give no support for this limitation (see 112 rejection below).

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 4, 6-9, 22 and 23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 22 and 23 line 7-9 claim "the thinnest portion of the end wall is closer to the outermost peripheral portion than to the axial center of the inner end face with respect to the radial direction" which is not supported by the specification. Nowhere does the specification state where the thinnest portion of the end wall is located.

Claim Rejections - 35 USC 102

^{10-15, 17, 18}
Claims 4, 6, 8, ~~10-18~~, 22 and 23, inasmuch as they are supported by the specification, are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Weidely (see below).

Claims 4, 6, 9, 22 and 23, inasmuch as they are supported by the specification, are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Japan (see e.g. fig 1 or 2).

Claim Rejections - 35 USC § 103

Claims 9 and 19, inasmuch as they are supported by the specification, are rejected under 35 U.S.C. § 103 as being unpatentable over Weidely in view of Gruetjen. Weidely discloses a hollow piston comprising an end wall having a flat outer end face exposed to pressure of a cylinder bore and an inner end face; wherein a recess is formed in the outer end face; wherein the inner end face includes a protrusion, including

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ribs, and a convex surface located radially inside and joined to an annular concave surface; wherein the convex surface is a smooth curved surface and has a uniform cross section over its entire circumference about an axis of the piston; and wherein the contour of the inner end face first approaches and then departs from the outer end face, from a radially outer portion to a radially inner portion; wherein the end wall is part of a head piece coupled to a body piece, which includes the remainder of the piston; but does not disclose that the head and body pieces are separable, and when separated, the inner end face is exposed.

Gruetjen teaches, for a piston comprising a head piece (1) coupled to a body piece (6), wherein the head piece includes an end wall having an outer end face exposed to pressure of a cylinder bore and an inner end face, and the body piece includes the remainder of the piston; that the head piece is formed separate from the body piece, and when separated, the inner end face is exposed, for the purpose of decreasing fabrication costs (column 1 line 20-21). One of ordinary skill in the piston art would recognize that the decreased cost is due to being able to form the complex shape on the inner end face, without interference by the body piece.

Since the inner end face of Weidely is relatively complex, and Gruetjen teaches forming a head piece before attaching it to a body piece, for the purpose of decreasing costs, due to being able to form the complex inner end face, without interference by the body piece, the purpose disclosed by Gruetjen would have been recognized in the pertinent art of Weidely. It would have been obvious at the time the invention was made to one having ordinary skill in the art to form the head piece of Weidely separate from the body piece, and when separated, the inner end face is exposed, as taught by Gruetjen, for the purpose of decreasing fabrication costs.

Conclusion

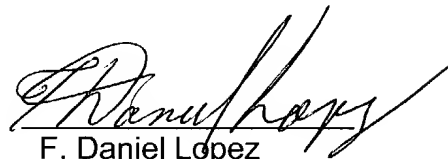
Claim 7 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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Claims 20 and 21 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Lopez whose telephone number is (703) 308-0008. The examiner can normally be reached on Monday-Thursday from 6:30 AM -4:00 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Look, can be reached on (703) 308-1044. The fax number for this group is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0861.

A handwritten signature in cursive script, appearing to read 'F. Daniel Lopez', is written over a horizontal line.

F. Daniel Lopez
Primary Examiner
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July 26, 2004